Name:

p1105: Factoring when $a = 1$ (v7)

Example: Factor $x^2 + 5x - 24$

Find two numbers whose product is -24 and whose sum is 5. Focus on finding factor pairs of -24. Eventually you consider 8 and -3 because $(8)(-3) = -24$. You verify this pair is correct because $(8) + (-3) = 5$. Thus, your answer:

$$(x + 8)(x - 3)$$

1. Factor $x^2 + 13x + 42$

   $(x + 7)(x + 6)$

2. Factor $x^2 + 3x - 18$

   $(x + 6)(x - 3)$

3. Factor $x^2 + 2x - 24$

   $(x + 6)(x - 4)$

4. Factor $x^2 - 4x - 32$

   $(x + 4)(x - 8)$

5. Factor $x^2 - 4x - 45$

   $(x - 9)(x + 5)$

6. Factor $x^2 + 14x + 45$

   $(x + 9)(x + 5)$

7. Factor $x^2 - 3x - 10$

   $(x + 2)(x - 5)$

8. Factor $x^2 + 9x + 14$

$(x + 7)(x + 2)$

9. Factor $x^2 + 16x + 63$

$(x + 7)(x + 9)$

10. Factor $x^2 - 8x + 7$

$(x - 1)(x - 7)$

11. Factor $x^2 - x - 72$

$(x - 9)(x + 8)$

12. Factor $x^2 + 14x + 48$

$(x + 8)(x + 6)$

13. Factor $x^2 + 3x - 10$

$(x - 2)(x + 5)$

14. Factor $x^2 + 6x - 16$

$(x - 2)(x + 8)$

15. Factor $x^2 - 8x + 12$

$(x - 6)(x - 2)$